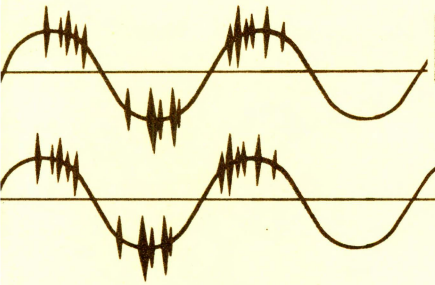

NIBBLE NEWS

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HELLO AGAIN

As usual the month has zipped by, and here it is time to wrap up this months newsletter again. This month we'll be mailing to over twice as many people as last month, so we would like to thank all of you for your support!

This month you will see a large number of new and modified parameters, many in our user contributed section. We would like to thank all of those who have contributed parameters and hope that they keep up the good work.

In this issue we have the second installment of FUN WITH THE SECTOR EDITOR, along with a description of the NIBBLES AWAY II analyzer, as well as the usual parameter listings.

In response to last months article 'PATCH-WORK' we have had several inquiries for patches for particular printer interface boards. We are currently testing patches for the Picasso board and the Grappler. If you have a printer board which is not currently compatible, we may be able to develop a patch for it if you can send us any information from the card's manual on direct machine language interfacing to the card. These patches will be published in this newsletter as they are developed, and they will be incorporated into future Auto-Load diskettes.

See you next month!

Randy Ubillos

As of November first, the hours for our customer support line will be Monday thru Friday from 9:00 am to 5:00 pm (EST). If you receive a recorded message it means that no one is available at the moment, but please leave your name and number, and we will call you back as soon as possible.

THE ANALYZER

During the process of backing-up a diskette, you will see four messages in the status line: READING, ANALYZING, WRITING and VERIFYING. It is during the analyzing process that most of the parameters in NIBBLES AWAY][are used.

In this article we will discuss the procedures which are performed to analyze the data from a disk, and where the various parameters come into play. Below is a basic outline of the procedure which NIBBLES AWAY][uses to analyze a track of data.

1) Read track into data buffer

2) Find first GAP

This is done in one of two ways:

a. If no address mark is specified, then NIBBLES AWAY][looks for the first section of data which has values between [GAPBYTE1] and [GAPBYTE2]-1. To be a GAP, there must be at least [GAP SIZE] bytes which fall in this range.
The track buffer is scanned forward until the section of bytes which are valid for a GAP run out. At this point NIBBLES AWAY][tries to see if the GAP has really ended, or if there is just a glitch in the data. NA][looks forward [FALSE LO] bytes and scans up to [FALSE HI] bytes forward to see if there is more GAP ahead. If more GAP is found within this range, then the previously found GAP is considered invalid and is ignored, otherwise the end of the GAP is marked as the start of a trackfull of data.

b. If an address mark has been specified, then this sequence of bytes is searched for, and the location where it is found is marked as the beginning of a trackfull of data.

3) Now NA][searches forward in the data to see if it can find a match for the data following the GAP. This is done to insure that the GAP which was found is consistent. The search for a match takes place starting [DATA MIN] pages (a page is $100 bytes) forward from the location of the initial GAP, and continues up to [DATA MAX] pages forward. When looking for a data match, [FIND MAX] bytes are required to be matched before the data is considered valid. If a match is found, then this is marked as the end of a trackfull of data, otherwise an error message is displayed.

4) Next the trackfull of data which has been marked is moved so that it ends at location $7FFF. While the data is being moved, all of those bytes which show as inverse in the [NIBBLE FILTER] are removed from the data, this gets rid of any garbage which may have shown up within the data in the read buffer.

5) If an insert mark has been selected, NA][now scans the data which has been moved to see if the desired insert mark exists. If so, the high bit of this byte is set to zero to tell the write routine to put it on the disk as a SYNC byte. If the parameters [OFFSET +] or [OFFSET -] have been set to a non-zero value, then the location which has its high bit changed will be shifted that number of bytes in the forward or backward direction respectively. This allows an insert mark to be added even if the actual byte which is SYNC is not constant, but the bytes previous to it or after it are.

6) If the [SYNC CONVERTER] is selected then one of two things can happen:
   a. If the [STANDARDIZER] is left on, then [FIX AMNT] bytes previous to every address mark will be set to the value of the parameter [FIX VALU]. This is normally $7F, which is a SYNC $FF. This adds a section of SYNC prior to every address mark for data reliability.
   b. If the [STANDARDIZER] is off, then [FIX AMNT] bytes previous to each address mark will be converted to SYNC. The values of these bytes will not change, but the high bits of each will be set to zero to make them into SYNC bytes.

7) The section of moved data is then written to the destination diskette, using either nine or ten bit sync, as specified by the value of the parameter [SYNC SIZ].

8) The data on the destination track is then read back in and matched against the data which was written out to verify the write operation.

This covers most of the main points of the analyze procedure used by NIBBLES AWAY][. In future months we will discuss the procedures used for synchronization and nibble counting.

FUN WITH THE SECTOR EDITOR

Welcome to the second installment of 'Fun with the Sector Editor'. In this issue we are going to begin our discussion of the catalog track which resides on track 11 of an Apple][diskette. This one track contains the Volume Table Of Contents (VTOC) and the actual catalog sectors. On this track you will find all information concerning the the programs and files that are contained on a particular diskette including filename, file type and length. Track 11 is used to hold the catalog because it is located in middle of the disk. From that position, access time to any other part of the disk is minimized. Later in the series we will use much of the information presented here to modify catalogs or to repair blown disks. Remember that unless otherwise specified, all values are in hexadecimal.

The VTOC serves as the root of the catalog. In every release of Apple DOS it has resided on track 11 sector 0. In this one sector a program or person can find out many things about the diskette including where to find the rest of the catalog, the volume number of the disk and the free and used sectors on the disk. The following is a view of the VTOC of an almost empty DOS 3.3 disk.

```
                SECTOR EDITOR
----------------------------------------
TRK=11                            SEC=00
----------------------------------------
00- 04110F03 0000FE00 00000000 00000000
10- 00000000 00000000 00000000 00000000
20- 00000000 0000007A 00000000 00000000
30- 13010000 23100001 00000000 00000000
40- 00000000 FFFF0000 FFFF0000 FFFF0000
50- FFFF0000 FFFF0000 FFFF0000 FFFF0000
60- FFFF0000 FFFF0000 FFFF0000 FFFF0000
70- FFFF0000 FFFF0000 FFFF0000 00000000
80- 3FFF0000 007F0000 FFFF0000 FFFF0000
90- FFFF0000 FFFF0000 FFFF0000 FFFF0000
A0- FFFF0000 FFFF0000 FFFF0000 FFFF0000
B0- FFFF0000 FFFF0000 FFFF0000 FFFF0000
C0- FFFF0000 00000000 00000000 00000000
D0- 00000000 00000000 00000000 00000000
E0- 00000000 00000000 00000000 00000000
F0- 00000000 00000000 00000000 00000000
```

The following is a description of each location in the VTOC and a short description of its function.

BYTE	FUNCTION
$00	Unused by DOS 3.3
$01	The track number of the first catalog sector
$02	The sector number of the first catalog sector
$03	The version number of the DOS on the disk.
$04 & $05	Unused by DOS 3.3
$06	The volume number of the disk.
$07 - 26	Unused by DOS 3.3
27	This is the maximum number of track and sector pairs that can fit in each sector of a Track/Sector list. (Usually 122).
28 - 2F	Unused by DOS 3.3
30	The last track where DOS allocated any sectors
31	The direction that DOS is allocating tracks. (+ or -)
32 & 33	Unused by DOS 3.3
34	The number of tracks per disk. Usually 35 for a DOS 3.3 disk.
35	The number of sectors per track. 13 for DOS 3.2 and lower, 16 for DOS 3.3.
36 & 37	The number of bytes in each sector, stored low-order/high-order format. Usually $00,$01 or 256 bytes.
38 - 3B	The 'Bit map' for track $. A bit map indicates which sectors are used and which are free on a given track.
3C - 3F	The Bit map for track 1.
40 - 43	The Bit map for track 2.
....	Each track has 4 bytes allocated to it for its Bit map.
BC - BF	The bit map for track 33.
C0 - C3	The bit map for track 34.
C4 - FF	These bytes have been left for future expansion. They are used for the bit maps of tracks greater than the 35 on a DOS 3.3 disk.

Most of these are self expanlatory but a few could use a little explanation. Byte Ø6 stores the volume number of the diskette but this is not the only place that it is stored. It is also written at the begining of each and every sector on the disk so changing this location will not actually change the disk volume number. Byte 27 contains the number of track/sector pairs that will fit in each sector. This is required because not all disk systems that may be used on an Apple][may contain 256 bytes per sector and would therefore hold more track/sector pairs. Bytes 3Ø an 31 tell DOS on what track it last allocated a sector and in which directon it was headed. The direction byte is needed because when DOS begins saving files on a disk it first starts on track 12 and works it way to track 34 (the '+' direction.) After it reaches track 34 it then goes to track 1Ø and works its way to track 3 (the '-' direction.) Bytes 34 through 37 give the drive's specifications such as the number of sectors per track and the number of tracks per disk. For example, on some 8 inch drive systems they use 154 (decimal) tracks and 3Ø (decimal) sectors of 256 bytes each. That gives each diskette a capacity of 1,182,72Ø bytes (1.1 mega-bytes)

Note that on the screen dump above, tracks Ø, 1, 2, and 11 are filled and tracks 12 and 13 are only partially used. On track 12, sectors F and E are used. On track 13 sectors B, C, D, E and F are used. The diskette used in the example above contained only two files. The first was the 'HELLO' program which was two sectors long and the second was a binary file five sectors long. The location of these two files on the disk brings up an interesting point. When DOS saves a file on a disk, it looks first for empty tracks to use and if it finds one puts as much of the file as it can on that track. If there is not enough room on that one track (16 sectors x 256 bytes = 4Ø96 bytes), it goes in search of another empty track. But if the file does not completely fill the track, DOS will not use the leftover sectors until it has run out of complete tracks to use. That is why in the example only two sectors of track 12 and five sectors of track 13 were used, not the expected seven sectors on track 12. Also note that DOS uses the sectors on a track in decending order, that is, sector F first and then sector E and so on down to sector Ø. When DOS allocates a sector on a track it first allocates the entire track, then writes to the sector or sectors that it needs to. Only after it is done writing and if no errors have occured does it free the still unused sectors on that track. This is done to prevent the problems that might arise if an error occured during writing. DOS has no way of knowing what damage may have been done by the error so it leaves the entire track allocated so that no other files will try to use that space. Like the saying goes... Better safe than sorry!

Each track is allocated 4 bytes for its Bit map starting at location 38 in the VTOC. Each bit in the Bit map corresponds to a sector on the disk (hence the name 'Bit map'.) If the bit is set (a binary 1) then the sector is free. Because there are only 16 sectors to a track, only two of the bytes for each track are used. The other two are reserved for future expansion. (These bytes are used by higher density storage devices such as eight inch disk drives.) The Bit maps are arranged so that the low order bit of the first byte corresponds to sector F, the next bit to sector E and so on. The term low order usually refers to the least significant in the byte, meaning bit zero. In other words..

Byte	Corresponding Bit/Sector
00	F E D C B A 9 8
01	7 6 5 4 3 2 1 0
02	- - - - - - - -
03	- - - - - - - -

For example if only sector D was allocated, then the four bytes would be: DF FF 00 00. On the other hand, if only sector D was free then the bytes would be: 20 00 00 00. Maybe some examples would help make things a little more understandable. For instance... if we wanted to allocate sectors 0, 1, and 2 on track 5 then, refering to the VTOC screen above, we would look at bytes 4C and 4D and clear the bits corresponding to the sectors. We would leave the first byte alone because we have no interest in sectors 8 through F but in the second byte we would clear the three least significant bits. This is would result in the byte becoming hexadecimal F8 and this would be the value that we place in location 4D. It is important to remember to take into consideration the bit pattern before you modify it so any sectors whose status you do not wish to modify remains the same.

That all for this time. Next month we will cover the format of the catalog sectors and the meaning of the information contained in them.

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U S E R C O N T R I B U T E D P A R A M E T E R S

The following parameters have been received from Nibbles Away][users, and have not been tested by COMPUTER:applications, Inc.

COMPANY NAME: PROGRAM NAME	COPY TRACKS	PARAMETERS TO CHANGE	AUTO-LOAD FILE TO USE
A P P L E C O M P U T E R			
Super Pilot -------	0-0	Addr=D5 AA 96	
	2-22		
		SECTMOD [F=16,C=OFF,T=0,S=0A]	
		Change address 79 from 43 to EA	
		Change address 7A from 41 to EA	
		Change address 7B from C6 to EA	
A U T O M A T E D S I M U L A T I O N S:			
Temple of Apshai --	0-22	Addr=D5 AA B5	
A V A N T E - G A R D E			
Hi-Res Secrets ----	0-22	Addr=D5 AA 96	
B R O D E R B U N D S O F T W A R E:			
Warlords ----------	0-F	Addr=D5 AA B5	
C E N T R A L P O I N T S O F T W A R E:			
Copy II Plus ------	0-2	Normal	
		Del Byte =20	
D A T A M O S T:			
Space Kadet -------	0-22	Addr=D5 AA 96	
Mars cars		Overide Standardizer	
Crazy Mazey			
Tax Beater --------	0-22	Addr=D5 AA 96	
REAP		SECTMOD [F=16,C=OFF,T=0,S=03]	
		Change address 42 from 38 to 18	
Money Muncher -----	0-22	Addr=D5 AA 96	

```
E D U W A R E:
The Prisoner ------ 0-22..........Sync
Algebra I --------- 0-22..........Addr=D5 AA B5
Empire 1 World ---- 0-22..........Addr=D5 AA 96
Builders           3-3...........Nibble Count
Prisoner II ------- 0-22..........Addr=D5 AA 96
                        SECTMOD [F=16,C=ON,T=1F,S=0E]
                         Change address D5 from AD to 2F
                         Change address D6 from 99 to AF
                         Change address D7 from F0 to 32
I N F O C O M:
StarCross --------- 0-22..........Addr=D5 AA 96

I N S O F T:
Electric Duet ----- 0-22..........Addr=D5 AA 96
                                  Ins= DE AA EB
                                  Overide Standardizer
                                  Fix Amnt=04
I N T ' L   S O F T W A R E   M K T G
Math Magic -------- 0-22..........Normal

I D S:
Prism Print ------- 0-21..........Addr=D5 AA 96
                                  Overide Standardizer
                        SECTMOD [F=16,C=ON,T=21,S=00]
                          Change address 27 from FB to 22

L E A R N I N G   C O M P A N Y
Bumble Games ------ 0-22..........Addr=D5 AA 96
Bumble Plot        NOTE: Write Protect before booting!
Rocky's Boots
Juggler's Rainbow

M I C R O L A B
Jigsaw ------------ 0-0............Normal
                    A-17..........Normal
                    1-9...........Addr=D3 96 F2
M U S E:
Best of MUSE ------ 0-22..........Sync
Three Mile Island
Global War

M I C R O S O F T:
Olympic Decathalon  0-22..........Addr=D5 AA B5
```

```
ONLINE SYSTEMS:
General Manager --- Ø-22.....Addr=D5 AA 96
V1.5                    SECTMOD [F=16,C=ON,T=1F,S=ØE]
                          Change address C1 from -- to 4B
                          Change address C2 from -- to EØ
                          Change address C3 from -- to 49
                        SECTMOD [F=16,C=ON,T=21,S=Ø1]
                          Change address 2E from -- to 6Ø
Sabotage ---------- Ø-22.....Normal
Alien Rain
Snoggle ----------- Ø-22.....Addr=D5 AA B5
Time Zone V1.1 ---- Ø-22.....Addr=D5 AA 96
                        SECTMOD [F=16,C=ON,T=Ø3,S=ØB]
                         Change Address FØ from 2Ø to EA
                         Change Address F1 from ØØ to EA
                         Change Address F2 from 17 to EA

PENGUIN SOFTWARE:
Pie Man ----------- Ø-22.....Addr=D5 AA 96

PHOENIX SOFTWARE:
Zoom Graphics ----- Ø-22 by 2.....Addr=D5 AA 96
2nd Edition                       Ins=DD AA ED B5
                    1-21 by 2.....Addr=D4 AA 96

                    N O T E: Write Protect before booting!!

Adventure In Time - Ø-C.....Normal
Birth of the ------ Ø-9.....Normal
Phoenix
PICADILLY SOFTWARE:
Falcons ----------- Ø-Ø.....Addr=D5 AA B5
                    1.5-4.5x1.5....Addr DF AD DE
                    5.5-5.5x1
                    7-Ax1
                    B.5-E.5x1.5
                    1Ø-12x1
                    13.5-14.5x1
                    16-19x1.5
                    1A-1B.5x1.5
```

```
S E N S I B L E   S O F T W A R E:
Image Printer ----- 0-2.............Addr=D5 AA 96
                    3-7.............Addr=F7 AA 96
                    9-22
                     SECTMOD [F=16,C=OFF,T=0,S=03]
                       Change address 42 from 38 to 18
                     SECTMOD [F=16,C=OFF,T=2,S=03]
                       Change address 2A from 2C to 4C
                       Change address 2B from 06 to 5D
                       Change address 2C from B7 to B4
Super Disk Copy --- 0-22............Addr=D5 AA 96
(Version 3.7)                        Errors OK
The Bug ------------ 0-0.............Normal
                    15-15..........Gap Byte 2=FF
                                    Gap Size=10
                    16.5-16.5
S E R I U S   S O F T W A R E:
Kabul Spy ---------- 0-21............Addr=D5 AA 96
(both sides)         SECTMOD [F=16,C=OFF,T=0,S=0
                       Change address 49 from -- to EA
                       Change address 4A from -- to EA
                       Change address 4B from -- to EA
Dark Forest -------- 0-22............Addr=D5 AA B5
                                    Overide Glitch detect
S I L I C O N   V A L L E Y   S O F T W A R E:
Word Handler II --- 0-0C............Addr=FF DF DE
                    11-22..........Addr=D5 AA 96
S O F T A P E:
Draw Poker --------- 0-22............Addr=D5 AA B5

S O F T W A R E   P U B L I S H I N G   C O R P.:
PFS/PFS Report ---- 0-13............Addr=D5 AA 96
(Revised)                           Overide Standardizer
                                    Gap Byte 1=C0, Gap Byte 2=D0
                                    Filter=C0-C8 (no inverse)
                    N O T E: Write Protect before booting!!
PFS Graph ---------- 0-22............Addr=D5 AA 96
                                    Overide Standardizer
                                    Gap Byte 1=C0, Gap Byte 2=D0
                                    Filter=C0-C8 (no inverse)
S P E C I A L   D E L I V E R Y   S O F T W A R E:
Utopia Graphics --- 0-22............Addr=D5 AA 96
System                              Turn on 3.3 filter
                      SECTMOD [F=16,C=ON,T=0,S=0]
                        Change address 42 from 38 to 18
Galactic Wars ------ 0-22............Addr=D5 AA 96
Bridge Tutor
```

S T O N E W A R E:
D B Master -------- Ø-5.....Addr=D5 AA 96, Sync
Utility pac #1 6.5-22.5.....Sync

S T R A T E G I C S I M U L A T I O N S:
Battle of Shiloh -- Ø-22.....Addr=D4 AA B7
Warp Factor

S Y T O N I C S O F T W A R E:
Interlude ----------Ø-22.....Addr=D5 AA B5

X P S:
Apple Cillin ------ Ø-Ø.....Addr=D5 AA 96
1-22.....Addr=D5 AA B5
11-11.....Addr=D5 AA 96

PARAMETERS: OCTOBER 1982

```
COMPANY NAME:
PROGRAM NAME          COPY TRACKS     PARAMETERS TO CHANGE
----------------      -----------     --------------------
A d v e n t u r e   I n t e r n a t i o n a l:
Eliminator -------- Ø-21.....Addr=D5 AA 96
                        SECTMOD [F=16,C=OFF,T=Ø3,S=ØD]
                          Change address 2E from 2Ø to EA
                          Change address 2F from 3Ø to EA
                          Change address 3Ø from 72 to EA
A p p l e   C o m p u t e r:
Visicalc /// ------ Ø-22.....SYNC
Apple Writer /// -- Ø-22.....SYNC
Apple Logo -------- Ø-22.....Addr D5 AA 96
                    1-1......Addr AA D6 EE
                                NIBBLE COUNT=Y
                                  FIND MAX=Ø3
                                 SHIFT N+ = Ø8
                                 SHIFT N- = ØØ
Apple Writer II --- Ø-3......Addr D5 AA DA (or D5 AA DB)
                    4-22.....Addr D5 AA 96
A v a n t e - G a r d e   C r e a t i o n s
Zero Gravity Pinball Ø-22.....Addr=D5 AA B5
B P I: (REVISED)
Accounting -------- Ø-22.....Addr=D5 AA 96
  System                  FIX AMNT=Ø4,  GAPBYTE1=C8
                          GLOBAL MOD BYTE D972 from Ø3 to ØØ
                    11-11....Ins=AD FB E6 FF E6
                                SYNC SIZ=ØA
B r o d e r b u n d   S o f t w a r e:
Apple Panic ------- Ø-D
Genetic Drift ----- Ø-Ø......Addr=D5 AA B5
                    1-3......Addr=BB D5 BB
                    4.5-6 by 1.5
                    7.5-B.5
                    D-D......Addr=D4 D5 BB
                    E.5-12.5.....Addr=AD B5 DE
Space Quarks ------ Ø-Ø......Addr=D5 AA B5
                    1-2......Addr=FF DF DE, DATA MAX=25
                    3.5-5.5
                    7-9 by 2
                    A.5-B.5
                    D-15
```

```
Space Warrior ----- 0-0.............Addr=D5 AA B5, DATA MAX=30
                    2.5-3.5.........Addr=DF AD DE
                    5-8 by 3
                    6.5-6.5
                    A-10 by 3
B u d g c o:
Raster Blaster ---- 0-0.............Addr=D5 AA 96, SYNC
                                    DATA MIN=18, DATA MAX=40
                    5-11 by 4.......Addr=AD DE, DATA MIN=13, SYNC
                    6-12 by 4.......SYNC
                    7.5-F.5 by 4...SYNC
                    1.5-3.5 by 2...SYNC
C a v a l i e r   C o m p u t e r:
Microwave --------- 0-22............Addr=D5 AA 96
                      SECTMOD [F=16,C=ON,T=02,S=01]
                         Change address DA from A9 to AD
                         Change address DB from 60 to 03
                         Change address DC from 8D to 81
                         Change address DD from 7E to 60
C o n t i n e n t a l   S o f t w a r e:
Guardian ---------- 0-1.............Addr=D5 AA B5
                    2-11............Addr=D6 AA B5
                                    Ins=DF AA EB F7, SYNC SIZ=0A
D a t a   M o s t:
County Fair ------- 0-22............Addr=D5 AA B5
Snack Attack         SECTMOD [F=13,C=OFF,S=03,T=00]
                       Change address 63 from 38 to 18
Snack Attack ------ 0-22............Addr=D5 AA B5
(revised)            SECTMOD [F=13,C=off,S=01,T=00]
                       Change address 39 from 38 to 18
Swashbuckler ------ 0-22............Addr=D5 AA 96
Casino 21            SECTMOD [F=16,C=OFF,S=03,T=00]
                       Change address 42 from 38 to 18
Canyon Climber ---- 0-2.............Addr=D5 AA 96
                        SYNC SIZ=0A, FIX AMNT=04
                    11-17
                     SECTMOD[F=16,C=OFF,T=00,S=01]
                        Change address 48 from 00 to 84
                        Change address 49 from 9B to 9D
D a t a   S o f t:
Dung Beetles ------ 0-0.............Addr=D5 AA B5
                    1-1.............Addr=F5 F6 F7
                    4-22
                     SECTMOD [F=13,C=ON,T=00,S=01]
                        Change address 6D from 01 to 7B
                        Change address 6E from 61 to 69
```

```
Gebelli Software:
Firebird ---------- 0-0.....Addr=DD AD DA, SYNC
                    1.5-B.5.....SYNC
Howardsoft:
Tax Preparer ------ 0-22.....Addr=D5 AA 96
Infocom:
Deadline ---------- 0-22.....Addr=D5 AA 96
Innovative Design Software:
Pool 1.5 ---------- 0-15.....Addr=D5 AA B5
                    1E-21
                      SECTMOD[F=13,C=OFF,T=0B,S=07]
                         Change address 6A from 8D to 60
                      SECTMOD[F=13,C=OFF,T=00,S=03]
                         Change address 63 from 38 to 18
LJK Enterprises:
Letter Perfect ---- 0-22.....Addr=D5 AA B5
Level 10 Software:
Neutrons ---------- 0-22.....Addr=D5 AA 96
Kaves of Karkhan

Lightning Software:
Master Type ------- 0-2.....Addr=D5 AA B5
                    3-22.....Addr=D4 AA B5
                                  (Error on $1B OK)
                    SECTMOD [F=13,C=OFF,S=03,T=00]
                         Change address 63 from 38 to 18
                    SECTMOD [F=13,C=OFF,S=0A,T=02]
                         Change address 2E from 23 to 2E
Magna Soft:
Tunnel Terror ----- 0-0.....Addr=D5 AA B5
                    1-12.....Addr=D6 AA B5
                                  Ins=DF AA D7 EB, SYNC SIZ=0A
Micro Lab:
Peeping Tom ------- 0-0.....Addr=D5 AA B5
                    1-1.....Addr=F5 AB BE
                    4-22
                     SECTMOD [F=13,C=ON,T=00,S=01]
                         Change address 6D from 01 to 7B
                         Change address 6E from 60 to 68
Roach Hotel ------- 0-0.....Addr=D5 AA B5
                    1-1.....Addr=EE EA FE
                    4-22
                     SECTMOD [F=13,C=OFF,T=00,S=01]
                         Change address 75 from 01 to 7B
                         Change address 76 from 61 to 69
```

```
VisiFactory ------- 0-22.....Addr=D5 AA 96
                    SECTMOD [F=16,C=OFF,T=00,S=03]
                        Change address 42 from 38 to 18
                    SECTMOD [F=16,C=OFF,T=01,S=00]
                        Change address 84 from 4C to AD
                        Change address 85 from 8E to E9
                        Change address 86 from AE to B7
Invoice Factory --- 0-22.....Addr=D5 AA 96
M i n d   S y s t e m s   Inc:
AirSim 1 ---------- 0-2......Addr=D5 AA B5
                    8-F
                    3-7......Addr=FF FF AB
M i n d   T o y s:
Jabbertalky ------- 0-22.....Addr=D5 AA 96
Ricochet ---------- 0-22.....Addr=D5 AA 96

O n l i n e   S y s t e m s:
Cranston Manor ---- 0-22.....ERASE DEST TRACKS
Expediter ][ ------ 0-22.....Addr=D5 AA 96
                                ERASE DEST TRACKS
Gobbler ----------- 0-22.....Addr=D5 AA B5
                                ERASE DEST TRACKS
Jaw Breaker ------- 0-22.....Addr=D5 AA B5
                                ERASE DEST TRACKS
Hires Adv #1 ------ 0-22.....Addr=D5 AA B5
Hires Adv #2 ------ 0-22.....Addr=D5 AA B5
Paddle Graphics --- 0-23.....Addr=D5 AA B5
Hires Soccer ------ 0-22.....Addr=D5 AA B5, SYNC
Thrilogy ---------- 0-22.....Addr=D5 AA B5, SYNC
Hires Cribbage ---- 0-22.....Addr=D5 AA B5, SYNC
Missile Defense --- 0-22.....Addr=D5 AA B5, SYNC
Marauder ---------- 0-22.....Addr=D5 AA 96, Overide Standardizer
                    SECTMOD [F=16,C=ON,T=03,S=07]
                      Change Address 90 from A8 to 60
Pegasus ][ -------- 0-22.....Addr=D5 AA B5
                                ERASE DEST TRACKS
ScreenWriter ][ --- 0-22.....Addr D5 AA 96
                                    Sync Siz=0A, Fix Amnt=04
                    SECTMOD [F=16,C=ON,T=03,S=0B]
                     Change Address 94 from 20 to EA
                                    95 from 00 to EA
                                    96 from 7F to EA
                    SECTMOD [F=16,C=ON,T=13,S=04]
                     Change Address 4D from 20 to EA
                                    4E from 00 to EA
                                    4F from 60 to EA
```

```
Softporn ---------- 0-22.....Addr=D5 AA B5
  Adventure 3.2                ERASE DEST TRACKS
Softporn ---------- 0-22.....Addr=D5 AA 96
  Adventure 3.3                ERASE DEST TRACKS
Threshold --------- 0-22.....Addr=D5 AA B5
                               ERASE DEST TRACKS
Ulysses & --------- 0-22.....Addr=D5 AA 96
  Golden Fleece                Erase DEST TRACKS
Time Zone  (V1.0)
     Disks A-L ---- 0-22.....Addr=D5 AA 96, 'OVERIDE STANDARDIZER'
 then Disk A ------ SECTMOD [F=16,C=ON,T=03,S=05]
                      Change address 5B from 4C to 60
                    SECTMOD [F=16,C=ON,T=03,S=03]
                      Change address AB from A9 to 60
Cannonball Blitz -- 0-22.....Addr=D5 AA 96
                    SECTMOD [F=16,C=ON,T=17,S=0E]
                      Change address CD from 49 to 60
Mouskattack ------- 0-22.....Addr=D5 AA 96
                    SECTMOD [F=16,C=ON,T=18,S=03]
                      Change address B1 from 49 to 60
P e r s o n a l   B u s i n e s s   S y s t e m s:
Executive --------- 0-22.....Addr=D5 AA 96
  Secretary
P i c a d i l l y   S o f t w a r e:
Suicide ----------- 0-0.....Addr=D5 AA B5
                    11.5-22 by 1.5.Addr=DF AD DE
Star Blaster ------ 0-0.....Addr=D5 AA 96
                    7-20 by 1.5....Addr=DF AD DE
P h o e n i x   S o f t w a r e:
Zoom Grafix ------- 0-0.....Addr=D5 AA 96, Ins=DD AA ED B5
                               Sync Siz=0A
                    1-22.....Addr=D4 AA 96
P r o f e s s i o n a l   S o f t w a r e   T e c h n o l o g y:
Executive --------- 0-22.....Addr=D5 AA 96, Overide Standardizer
  Briefing System    SECTMOD [F=16,C=ON,T=21,S=00]
                      Change Address 27 from FB to 22
R i v e r b a n k   S o f t w a r e
International ----- 0-C.....Addr=FF FF FF AA
Grand Prix

S e n t i e n t   S o f t w a r e
Gold Rush --------- 0-22.....Addr=D5 AA 96

S i l i c o n   V a l l e y   S o f t w a r e:
Word Handler II --- 0-0.....Addr=D5 AA 96
                    11-22
                    1-C.....Addr=FF DF DE
```

S i r i u s S o f t w a r e:

```
Autobahn ---------- 0-0.............SYNC
                    4-6.............SYNC
                    9.5-C.5.........SYNC
Beer Run, Epoch --- 0-0.............Addr=DD AD DA, DATA MAX=25, SYNC
Copts & Robbers,    1.5-13.5........SYNC
Hadron, Snake Byte
NOTE: Errors will begin to occur somewhere between track C.5 and track 13.5,
     depending on the particular disk.  This is normal.
Gorgon ------------ 0-0.............Addr=DD AD DA, DATA MAX=25, SYNC
                    1.5-C.5.........SYNC
                    E.5-E.5.........SYNC
                    D.5-D.5.........Addr=D5 AA B5, SYNC
Sneakers ---------- 0-0.............Addr=DD AD DA, SYNC
                    1.5-C.5.........SYNC
                    D.5-D.5.........Addr=D5 AA B5, SYNC
Gamma Goblins ----- 0-0.............Addr=DD AD DA, SYNC
                    1.5-B.5.........SYNC
                    D-D.............Addr=FF FF FF D5 AA EE
                                    DATA MAX=30
Orbitron ---------- 0-0.............Addr=DD AD DA, DATA MAX=25, SYNC
                    1.5-E.5.........SYNC
                    F.5-F.5.........Addr=FF B5 D5 AA
Outpost ----------- 0-0.............Addr=DD AD DA, SYNC
                    1.5-9.5.........SYNC
                    B.5-B.5.........Addr=D5 AA AD, DATA MAX=25
Pulsar ][ --------- 0-C
                    13-19
                    1A.5-1D.5
Dark Forest ------- 0-0.............Addr=DD AD DA, SYNC
                    1-22............Addr=D5 AA A5, SYNC
                        (Errors on 6-8 and last few tracks OK)
Twerps ------------ 0-0.............Addr=DD AD DA, SYNC
                    1.5-E.5.........SYNC
                    1A-1A
Borg -------------- 0-0.............Addr=DD AD DA, SYNC
                    1.5-B.5.........SYNC
                    D-20............SYNC
Wayout ------------ 0-1C............Addr=AD DA DD
                    22-22...........Addr=AA D5 D5 FF D6 FF FD
                    21-21...........Addr=AA,  USE NIBBLE COUNT
                                    SYNC SIZ=0A, MATCH NM=06
```

```
S o f t w a r e   P u b l i s h i n g   C o r p
PFS/PFS Report ---- 0-0.............Addr=93 F3 FC FF
                                    Ins=93 F3 FC FF
                                    Offset -2, SYNC SIZ=0A
                    1-13............Addr=D5 AA 96, Ins=D5 AA 96
NOTE: Write Protect the backup diskette BEFORE using!!!

S o f t a p e:
Photar ------------ 0-22............Addr=D5 AA 96

S p e c i a l   D e l i v e r y   S o f t w a r e:
Personal ---------- 0-22............Addr=D5 AA 96
  Finance Manager

S t o n e w a r e:
DB Master (old) --- 0-5.............Addr=D5 AA 96
                    6.5-22.5
DB Master (new) --- 0-5.............Addr=D5 AA 96, SYNC
                    6.5-22.5
S t r a t e g i c   S i m u l a t i o n s:
Cartels & --------- 0-0.............Addr=D5 AA B5
  Cuthroats         2-22............Addr=DB D5 DE
Operation           1-1.............Addr=D5 AA DA FF
  Apocalypse
Torpedo Fire ------ 0-22............Addr=D4 AA B7
Southern Command

S u b l o g i c:
FS-1 -------------- 0-0
                    1.5-21 by 1.5..Addr=DB AB BF
                                    REDUCED ERROR CHECK
                    7-8............REDUCED ERROR CHECK
                    9.5-9.5........REDUCED ERROR CHECK
Saturn Navigator -- B-22............Addr=D5 AA FD, FIND MAX=08
                          (Errors on $11 and $17 OK)
                    6.5-6.5........FF FF D5 AA, FIND MAX=0C
                    0-4............Addr=D5 AA B5
                    11-11
Escape ------------ 0-22............Addr=D5 AA 96
A2-PB1 Pinball ---- 0-0.............Addr=D5 AA 96, DATA MAX=25
                    1-15............Addr=DB AB BF
S y n e r g i s t i c   S o f t w a r e:
Escape from ------- 0-22............Addr=D5 AA 96, 'OVERIDE STANDARDIZER'
    Arcturus                        'OVERIDE NIBBLE FILTER'
```

```
T u r n k e y   S o f t w a r e:
Ceiling Zero ------ 0-2.............Addr=D5 AA B5
                    3-11............Addr=D6 AA B5
                                    Ins=DE AA EB F9, SYNC SIZ=0A
U S A   S o f t w a r e:
Apple World ------- 0-23
Star Dance -------- 0-22............Addr=D5 AA B5

V I D E X   C O R P
Pre-Boot System --- 0-22............Addr=D5 AA 96

V i s i c o r p:
Visicalc 3.3 ------ 0-0.............Addr=D5 AA 96
                    2-22............Addr=D5 AA B5
                                (Errors toward end OK)
Visidex ----------- 0-22............Addr=D5 AA 96, Ins=DE AA EB FD
                                    SYNC SIZ=0A, FIX AMNT=04
Visiterm ---------- 0-22............Addr=D5 AA 96, Ins=DE AA EB FC
                                    SYNC SIZ=0A, FIX AMNT=04
Visitrend --------- 0-22............Addr=D5 AA 96, Ins=DE AA EB
  /Visiplot                         SYNC SIZ=0A, FIX AMNT=04
Desktop Plan II --- 0-22............Addr=D5 AA 96, Ins=AA EB FD
                                    SYNC SIZ=0A, FIX AMNT=04
Visifile ---------- 0-22............Addr=D5 AA 96, Ins=DE AA EB
                                    SYNC SIZ=0A, FIX AMNT=04
Visischedule------- 0-22............Addr=D5 AA 96, Ins=DE AA EB EC
                                    SYNC SIZ=0A, FIX AMNT=04
X P S   S O F T W A R E
Apple-cillin------- 0-D.............Addr=D5 AA 96
```

COMPUTER:applications Inc.

13300 S.W. 108 St. Cir. Miami, Fl. 33186
Tel (305) 385-4277 Source TCD328

presents

APPLE - LINK

A Communications System

< Price > < $ 59.95 >

F E A T U R E S

< F R E E > < Back-up >

* **TRANSMIT & RECEIVE**.....Send or Receive **'ANY'** type of file between Apple II Systems; (Inc. Random Access Text, and Relocatable)

* **EASY TO USE**.....Complete **MENU DRIVEN** operation requires **NO** previous Communications experience.

* **MULTI-FILE TRANSFER**.....Select as many files as desired for Transmit or Receive, with complete **AUTOMATIC** file transfer.

* **UNIQUE FILE SELECTION**...Both SEND & RECEIVE catalogs are displayed on screen, with **'Single Keystroke Selection'** of files, <as many as you want !>, for transfer. NO File Conversions by User. Just Select and Go...

* **REAL TIME CLOCK**.....Exact **File Transfer Time** is displayed on screen, in Minutes & Seconds, during the transfer process.....

* **ONLY ONE A-L NEEDED**.....Complete File Operation requires only **'one'** side to have the **APPLE-LINK Communications System** !!

* **COMPLETE ERROR CHECK**....All file transfers are **checked for errors**, and if detected, will retransmit the bad block until it is received correctly ... **No more BAD data**...

* **XFER COMPLETION REPORT**..As an operator aid, a **Transfer Completion Report** is generated automatically showing the status of all selected files. Errors, displayed in inverse, show type of problem encountered, for **easy** correction.

* **CONVERSE MODE**.....Allows two operators to **Communicate** using the apple keyboard.

* **DIRECT TO DISK XFER**.....**APPLE-LINK** reads and writes directly to diskette, eliminating Load/Save time and **reducing phone costs**

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presents

APPLE - CRYPT

Disk Encryption Device

APPLE-CRYPT is a unique **DATA ENCRYPTION SYSTEM** that employs both Hardware and Software to protect your sensitive information from unauthorized disclosure.

When activated, APPLE-CRYPT provides DATA ENCRYPTION for ANY type of work that is Read from, or Written to the Diskette, using standard DOS 3.3 format. Program development, as well as data derived from the use of other vender software, may be encrypted using the supplied UTILITY < CRYPT/DE-CRYPT >.

HARDWARE SUMMARY: **APPLE-CRYPT** comes with a plug-in circuit board with attached KEY receptacle. A programable pocket sized KEY is removed from the system receptacle when unauthorized use of the system is to be avoided.

SOFTWARE SUMMARY: **APPLE-CRYPT** provides the user with 4 levels of protection..

1..The Disk Encryption Software that actually encodes the data on the diskette.
2..The Programable receptacle pocket Key.
3..PASSWORD protection when Key is installed. In-house (employee) security is provided by User changeable passwords, which may only be changed by selectable supervisors.
4..**APPLE-CRYPT** is unique for every customer ie. Keys are made to operate on One system only, and will not function on different **APPLE-CRYPT** Systems...

Utility Disk provides 'Backup capability' for archival purposes

- - - - - - -

Contact ---> **COMPUTER:applications Inc.** <--- for additional information

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presents

AUTOMATED BUILDING DIRECTORY SYSTEM

With Direct Telephone Dialing

Installed in a secure cabinet in the lobby of a large office building, this system provides a complete Tenent/Personal listing, along with direct Auto-Dial telephone service to any occupant listed. Emergency Numbers may also be listed under seperate catagories to Page: Security, Maint, Manager, and etc.

This unique directory system eliminates the need for the public to personally visit an office, by providing telephone service from the main lobby. Building traffic is effectively reduced, with increased security and effiency.

SIMPLE KEYPAD OPERATION....The entire system is easily operated by remote keypad containing single keystroke operations The computer hardware is stored, out of sight.

AUTO-DIALING TELEPHONE.....Telephone access to any listed personal is completly automated by the computer. Selected persons are displayed on screen and dialed by the computer.

MULTI-LANGUAGE SUPPORTED...Users may select multiple languages, with all screen prompts, and data appearing in the respective language. (Eng. Spanish French etc)

BUILDING SECURITY.....Utilizing a computerized Telephone/Directory system, Building Security can be achieved by requiring the public to identify before access to the building is given.

EFFECTIVE ERROR RECOVERY...With any public access, electronic device, the need for effective error recovery is enhanced. This system will prompt the user to: Pick/Hang up the phone, and display pre-dial verification of person being called. A time out feature has been incorporated to return the system to its starting point if left unattended during use..

MULTIPLE TERMINALS.....Using the CORVUS Hard disk, multiple terminals may be incorporated for the larger size office building, providing instant access to the public directory system.

FLEXIBLE EDITING.....Adding, deleting, or changing information in the system is accomplished by a menu driven editing system providing fast data entry.

FAST DATA ACCESS.....Requested tenent information is displayed on screen quickly, to maximize effiency.

CUSTOM GRAPHIC SCREEN.....If desired, your corporate logo is displayed on the computer screen at all times when the system is in an idle condition; identifing the building host Corporation.

COMPUTER:applications Inc.

13300 S.W. 108 St. Cir. Miami, Fl. 33186
Tel (305) 385-4277 Source TCD328

presenting the

COMPUTERIZED PAGING SYSTEM

The 'COMPUTERIZED PAGING SYSTEM' provides the means to selectively notify customers or employees that their attention is required. Television stations positioned throughout the place of business display a sequence of numbers indicating the persons being paged.

FULL COLOR.....Using the many different colors provided by the VIC-20 Computer, a pleasant balance is achieved for ease of viewing.

VIDEO MARQUEE.....A 'Video Marquee' is provided at the bottom of the screen to display any or all of SIX user entered messages.

UNIQUE DISPLAY.....Selected numbers are flashed Full Screen Size and then placed on screen with an animated Custom Logo. 16 two digit numbers may be stored on the system at one time.

EASE OF USE.....NO special computer knowledge is required to operate the system. Paging is initiated by a remote keypad independent of other functions

HI-RES GRAPHICS.....Ultra smooth high resolution graphics, are used throughout the system to separate our system from the competition.

CUSTOM LOGO.....If desired, a Custom Logo can be developed free of charge to 'animate' the prompted number.

BATTERY BACKUP.....Provides uninterupted computer operation in the event of a power outage. NO DATA LOSS!!!

SYSTEM BACKUP.....An additional custom cartridge may be purchased at a nominal fee, providing additional backup.

WARRANTY INFO.....90 days parts and labor

The above system, primarlly used in restaurant applications, includes the VIC-20 computer, wired entry keypad, and a custom built cartridge.

Please contact COMPUTER:applications, Inc. for additional information.

COMPUTER: applications Inc.

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Miami, Florida 33186
(305) 385-4277 Source: TCD 328